

1 What is claimed is:

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3 ~~1. A structuring method, including photolithographically~~
4 ~~exposing a pattern comprising at least a first pattern~~
5 ~~portion and a second pattern portion onto a surface, said~~
6 ~~surface comprising at least a first surface portion at~~
7 ~~which a tangential plane to the surface extends in a first~~
8 ~~plane and a second surface portion at which a tangential~~
9 ~~plane to the surface extends in a second plane not~~
10 ~~coinciding with the first plane, the method comprising~~

11 ~~a first exposure step, in which the first pattern~~
12 ~~portion is exposed, therein being focused into a first~~
13 ~~focal plane, and~~

14 ~~a second exposure step, in which the second pattern~~
15 ~~portion is exposed, therein being focused into a second~~
16 ~~focal plane which is different from the first focal plane.~~

17

18 ~~2. The method according to claim 1, wherein the first~~
19 ~~focal plane and the second focal plane are mutually~~
20 ~~parallel.~~

21

22 ~~3. The method according to claim 1, wherein the first~~
23 ~~focal plane extends parallel to the first plane.~~

24

25 ~~4. The method according to claim 1, wherein the second~~
26 ~~focal plane extends parallel to the second plane.~~

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28 ~~5. The method according to claim 1, wherein~~
29 ~~the first pattern portion and the second pattern~~
30 ~~portion are exposed such that they at least partly overlap~~
31 ~~on the surface.~~

32

33 ~~6. The method according to claim 1, wherein the first~~
34 ~~exposure step and the second exposure step are performed~~
35 ~~subsequently.~~

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1 7. The method according to claim 1, wherein the distance
2 perpendicular to the first or second focal plane between
3 the first focal plane and the second focal plane is 150
4 μm .

5
6 8. A structuring method, including photolithographically
7 exposing a pattern comprising at least a first pattern
8 portion and a second pattern portion onto a surface, said
9 surface comprising at least one planar top face extending
10 in a first plane, one planar bottom face extending in a
11 second plane being parallel to and not coinciding with the
12 first plane, and a sloping step face connecting the top
13 face and the bottom face, the method comprising

14 a first exposure step, in which the first pattern
15 portion is exposed onto the top face and at least part of
16 the sloping step face, with the first pattern portion
17 being focused into a first focal plane, and

18 a second exposure step, in which the second pattern
19 portion is exposed onto the bottom face and at least part
20 of the sloping step face, with the second pattern portion
21 being focused into a second focal plane different from the
22 first focal plane.

23
24 9. The method according to claim 8, wherein the first
25 focal plane and the second focal plane are mutually
26 parallel.

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28 10. The method according to claim 8, wherein the first
29 focal plane extends parallel to the first plane.

30
31 11. The method according to claim 8, wherein the second
32 focal plane extends parallel to the second plane.

33
34 12. The method according to claim 8, wherein
35 the first focal plane is spaced closer to the first
36 plane than the second focal plane is, and

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1 the second focal plane is spaced closer to the second
2 plane than the first focal plane is.

3
4 13. The method according to claim 8, wherein
5 the first focal plane coincides with the first plane,
6 and the second focal plane coincides with the second
7 plane.

8
9 14. The method according to claim 8, wherein
10 the first focal plane coincides with the first plane
11 or the second focal plane coincides with the second plane.

12
13 15. The method according to claim 8, wherein
14 the first pattern portion and the second pattern
15 portion are exposed such that they at least partly overlap
16 on the surface.

17
18 16. The method according to claim 8, wherein the first
19 exposure step and the second exposure step are performed
20 subsequently.

21
22 17. The method according to claim 8, wherein the distance
23 perpendicular to the first or second focal plane between
24 the first focal plane and the second focal plane is 150
25 μm .

26
27 18. The method according to claim 8, wherein two
28 different masks are used to expose the first pattern
29 portion and the second pattern portion, respectively.

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31 19. The method according to claim 8, further comprising,
32 after the first and the second exposure step,
33 a deposition step, in which a conductive material is
34 deposited to the surface and further treated, if
35 necessary, so as to generate a conductive structure made
36 of conducting material and having a shape which
37 corresponds to the shape of the pattern.

1 20. A structuring method, including photolithographically
2 exposing a pattern comprising at least a first pattern
3 portion and a second pattern portion onto a surface, said
4 surface comprising at least one planar top face extending
5 in a first plane, one planar bottom face extending in a
6 second plane being parallel to and not coinciding with the
7 first plane, and a sloping step face connecting the top
8 face and the bottom face, the method comprising

9 a first exposure step, in which the first pattern
10 portion is exposed onto the top face and at least part of
11 the sloping step face, with the first pattern portion
12 being focused into a first focal plane,

13 a second exposure step, in which the second pattern
14 portion is exposed onto the bottom face and at least part
15 of the sloping step face, with the second pattern portion
16 being focused into a second focal plane different from the
17 first focal plane, and

18 at least one further exposure step, wherein

19 in the further exposure step, a further pattern
20 portion is exposed onto at least part of the sloping step,
21 with the further pattern portion being focused into a
22 further focal plane.

23
24 21. The method according to claim 20, wherein at least
25 two out of the first focal plane and the second focal
26 plane and the further focal plane/s are mutually parallel.

27
28 22. The method according to claim 20, wherein at least
29 one focal plane out of the first focal plane and the
30 second focal plane and the further focal planes extends
31 parallel to the first or second plane.

32
33 23. The method according to claim 20, wherein
34 the first focal plane is spaced closer to the first
35 plane than the second focal plane is, and
36 the second focal plane is spaced closer to the second
37 plane than the first focal plane is.

- 1 24. The method according to claim 20, wherein
2 the first focal plane coincides with the first plane,
3 and the second focal plane coincides with the second
4 plane.
5
- 6 25. The method according to claim 20, wherein
7 the first focal plane coincides with the first plane
8 or the second focal plane coincides with the second plane.
9
- 10 26. The method according to claim 20, wherein
11 the further focal plane/s is/are located between the
12 first focal plane and the second focal plane.
13
- 14 27. The method according to claim 20, wherein
15 pattern portions resulting from different exposure
16 steps out of the first, second and further exposure steps
17 and being adjacent on the surface at least partially
18 overlap.
19
- 20 28. The method according to claim 20, wherein
21 pattern portions resulting from different exposure
22 steps out of the first, second and further exposure steps
23 and being adjacent on the surface have an overlap of from
24 1 to 5 μm .
25
- 26 29. The method according to claim 20, wherein at least
27 two out of the first exposure step, the second exposure
28 step, and the further exposure step/s are performed
29 subsequently.
30
- 31 30. The method according to claim 20, wherein the
32 distance perpendicular to the first or second focal plane
33 between the first focal plane and the second focal plane
34 is 150 μm .
35
- 36 31. The method according to claim 20, wherein a different
37 mask is used to expose each of the first pattern portion,

1 the second pattern portion, and the further pattern
2 portion/s, respectively.

3

4 32. The method according to claim 20,

5 wherein the first pattern portion and the second
6 pattern portion are exposed such that they at least partly
7 overlap on the surface, and,

8 further comprising, after the first and the second
9 exposure step, a deposition step, in which a conductive
10 material is deposited to the surface so as to generate a
11 conductive structure made of conducting material and
12 having a shape which corresponds to the shape of the
13 pattern.

14

15 33. A structuring method, including photolithographically
16 exposing a pattern comprising at least a first pattern
17 portion and a second pattern portion onto a surface
18 extending in a surface plane and being structured
19 perpendicular to the surface plane, the method comprising

20 a resist coating step, in which the surface is coated
21 by a photosensitive resist,

22 a first exposure step, in which the first pattern
23 portion is exposed into the resist, therein being focused
24 into a first focal plane,

25 a second exposure step, in which the second pattern
26 portion is exposed into the resist, therein being focused
27 into a second focal plane which is different from the
28 first focal plane,

29 a development step, in which the exposed resist is
30 developed so as to transfer the pattern into the resist,
31 and

32 a deposition step, in which a conductive material is
33 deposited to the surface and further treated, if
34 necessary, so as to generate a conductive structure made
35 of conducting material and having a shape which
36 corresponds to the shape of the pattern.

37

1 34. A structuring method, including photolithographically
2 exposing a pattern comprising at least a first pattern
3 portion and a second pattern portion onto a surface
4 extending in a surface plane and being structured
5 perpendicular to the surface plane, the method comprising
6 a deposition step, in which a conductive material is
7 deposited to the surface,
8 a resist coating step, in which the surface is coated
9 by a photosensitive resist,
10 a first exposure step, in which the first pattern
11 portion is exposed into the resist, therein being focused
12 into a first focal plane,
13 a second exposure step, in which the second pattern
14 portion is exposed into the resist, therein being focused
15 into a second focal plane which is different from the
16 first focal plane,
17 a development step, in which the exposed resist is
18 developed so as to transfer the pattern into the resist,
19 and
20 an etching step, in which the exposed material not
21 covered by the resist is etched.

09916710-072701